

- Fig. 7. *Chactas Whymperi*, sp. n. Foot of posterior limb.
 Fig. 7 a. Ditto. Carapace from above.
 Fig. 7 b. Ditto. Immovable digit.
 Fig. 8. *Caraboctonus Keyserlingii*, gen. et sp. n. Foot of posterior limb.
 Fig. 9. *Bothriurus Keyserlingii*, sp. n. Last abdominal somite and first caudal segment from below.
 Fig. 9 a. Ditto. Fifth caudal segment from below.
 Fig. 10. *Bothriurus asper*, sp. n. Fifth caudal segment from below.
 Fig. 11. *Bothriurus signatus*, sp. n. Fifth caudal segment from below.
 Fig. 12. *Bothriurus coriaceus*, sp. n. Fifth caudal segment from below.

PLATE VI. A.

- Fig. 13. *Phoniocercus pictus*, gen. et sp. n. Dentition of digit.
 Fig. 13 a. Ditto. Foot of posterior limb.
 Fig. 14. *Urophonius Jheringii*, gen. et sp. n. Dentition of digit.
 Fig. 14 a. Ditto. Foot of posterior limb.
 Fig. 15. *Cercophonius squama* (Gerv.). Dentition of digit.
 Fig. 15 a. Ditto. Foot of posterior limb.

XXI.—*Descriptions of Twenty new Species of Terrestrial and Fluvial Mollusca from South Africa.* By JAMES COSMO MELVILL, M.A., F.L.S., and JOHN HENRY PONSONBY, F.Z.S.

[Plate III.]

IN the following paper, the seventh of a series of contributions towards the elucidation of the South-African Molluscan land-fauna, we deal more particularly with new forms of the genus *Ennea*, which are, critically speaking, more than usually attractive, presenting as they do so increasingly numerous an assemblage of nearly allied though apparently distinct species.

1. *Helix (Macrocyclus) Quekettiana*, sp. n.
 (Pl. III. fig. 1.)

H. testa ampla, profunde umbilicata, depresso-conoidali, olivaceo-cornea, subpellucida; anfractibus quatuor, longitudinaliter arete obliqui-liratis, liris sericatis, anfractu ultimo rapide et effuse accrescente, ad basin lævi, viridescente nitidissimo; apertura effuso-lunari, labro simplici, ad marginem columellarem paulum reflexo.

Long. 18, lat. 30 mill.

Hab. Pietermaritzburg (*J. F. Quekett, Esq.*).

A very handsome addition to *Macrocyclus*; much of the same build as *bullacea* (Pfr.), but larger and in every way a more striking species.

Three specimens, in magnificent condition.

The colour olivaceous horny, subpellucid in texture, in form effuse and depressed, slightly conical towards the apex; whorls four in number, beautifully closely longitudinally lirate, the liræ giving a silky appearance to the whorls. Below, the last whorl is quite smooth, olive-green, and very shining. The umbilicus is narrowly profound, mouth lunar; lip simple, thin, slightly reflexed at the columellar margin.

Discovered by Mr. Quekett, the active Curator of the Maritzburg Museum.

2. *Achatina scevola*, sp. n. (Pl. III. fig. 2.)

A. testa sinistrorsa, tenui, subpellucida, pallide ochracea, oblongo-ovata; anfractibus septem, ventricosulis, longitudinaliter brunneo-flammulatis, superne microscopice granato-striatulis, striis transversis, infra, anfractu ultimo sublævigato: columella leviter contorta, truncata, fusca; apertura oblonga, labro tenui.

Long. 2·35, lat. 1·25 inch.

Hab. Transvaal (*Mr. Bowker*). In Coll. Edgar L. Layard, Esq.

This shell, collected by Mr. Layard's nephew, Mr. Bowker, in the Transvaal, is, though in damaged condition, so peculiar, that we agree with its owner it is worthy of description. Nothing we have seen in the National or other collections exactly corresponds with it, though it does not at first sight seem to possess any extraordinary characters excepting in being sinistral.

The shell is thin, pale ochraceous, with longitudinal darker brown flames; whorls seven, microscopically granato-striate, the striæ transverse, the last whorl appearing almost smooth, though the above-mentioned striations are still with a lens traceable for, at all events, some little distance below the suture. The whorls are slightly ventricose, lip simple; columella slightly contorted, fuscous, and strongly truncate.

3. *Achatina penestes*, sp. n. (Pl. III. fig. 3.)

A. testa ovato-pyramidalis, supra, et præsertim ad apicem, multum attenuata; anfractibus sex, sub lente granato-decussatis, ad suturas impressis, anfractu ultimo rapide accrescente, ad basin laviore, longitudinaliter irregulariter ruguloso; apertura ovato-oblonga, columella ad basin contorquente, truncatula.

Long. (sp. maj.) 1·30, lat. ·75 inch.

Hab. Pretoria (*Wotton*).

Two specimens, neither in very good condition.

The shape is peculiar, ovate-pyramidal, the last whorl rapidly increasing, somewhat effuse, the other whorls small in proportion; the surface, excepting that of the basal half of the last whorl, which is smoothish though longitudinally wrinkled, granato-decussate.

This appears to be a very distinct new form.

4. *Stenogyra Crawfordi*, sp. n. (Pl. III. fig. 4.)

S. testa tenuissima, vitrea, attenuata, cylindrica; anfractibus quinque, lævigatis, ventricosus, sub lente tenuissime longitudinaliter striatulis, anfractu ultimo producto; apertura oblonga; peristomate simplici, recto, marginem apud columellarem paullum incrassato.

Long. (sp. maj.) 4.50, lat. 1.50 mill.

Hab. Van Staaden's River (*J. Crawford, Esq.*).

A smoothish glassy species, to which we cannot assign a place as the young of any South-African form with which we are acquainted, several of the specimens before us being apparently full-grown.

5. *Buliminus (Pachnodus) maritzburgensis*, sp. n.
(Pl. III. fig. 5.)

B. testa anguste umbilicata, omnino pellucida, læte cornea, tenuissima, pyramidali, ad apicem attenuato-conica; anfractibus sex, ventricosulis, ad suturas impressis, ultimo apud peripheriam subangulato, effuso; apertura rotunda; peristomate tenui, apud marginem columellarem multum reflexo, umbilicum obtigente.

Long. 14, lat. 9 mill.

Hab. Pietermaritzburg (*H. Burnup, Esq.*).

A very pretty transparent, horny, pyramidal species, six-whorled, attenuate towards the apex, the last whorl shouldered, somewhat broadened; whorls ventricose and impressed at the sutures, narrowly umbilicate; mouth roundish; peristome thin, simple, and much reflexed triangularly at the columellar margin, covering the umbilicus.

Allied to *B. conulus*, Reeve, from which, however, it will be found on comparison to be quite distinct.

6. *Buliminus transvaalensis*, sp. n.
(Pl. III. fig. 6.)

B. testa anguste umbilicata, conico-pyramidali, corneo-pellucida, ad basin depressa; anfractibus sex, ultimo in medio angulato,

undique longitudinaliter sub lente oblique tenuissime striatis; apertura rotunda, labro tenui, simplici, ad marginem columellarem late triangulatim reflexo.

Long. 6, lat. 3·10 mill.

Hab. North Transvaal (*Col. Bowker*).

Two specimens of a small horny, subpellucid, acuminate species; whorls six, last whorl angled towards the middle; mouth round, lip simple, broadly triangularly reflexed at the columellar margin.

This shell is unlike any other South-African species of the genus.

7. *Buliminus (Pachnodus) jejunus*, sp. n.
(Pl. III. fig. 7.)

B. testa ovato-conica, angustissime umbilicata, robusta, pallescente; anfractibus quinque, lævibus, undique strigis fulvo-brunneis oblique et irregulariter decoratis, ultimo in medio angulato, apud angulum transversim linea brunnea zonulato, labro simplici, ad marginem columellarem reflexo.

Long. (sp. maj.) 8, lat. 4·50 mill.

Hab. North Transvaal (*Col. Bowker*).

Five specimens of a neat small shell: form conically ovate, angled towards the middle of the last whorl; shell thick, whitish cinereous, with longitudinal, somewhat irregular brown streaks or flames; in four out of the five specimens there is a brown transverse zone at the angle of the last whorl.

The general appearance of the shell somewhat reminds one of *B. punctatus*, Anton.

8. *Ennea Crossleyana*, sp. n. (Pl. III. fig. 8.)

E. testa parum rimata, abbreviata, cylindriformi, subpellucida, albocinerea; anfractibus sex vel septem, longitudinaliter oblique costulatis, costulis infra suturas moniliformibus; apertura oblonga; peristomate albo, nitido, reflexo, plica parietali conspicua, labiali tridentata, basali minore, simplici, interna infra marginem columellarem nitida, mammæformi, valde intrante.

Long. 5·50, lat. 2 mill.

Hab. Pietermaritzburg (*Burnup*).

Several specimens of a very pretty and conspicuous *Ennea*. The tridentate labial tooth is noteworthy; the texture is semipellucid, and the whorls below the sutures have one transverse row of beaded granulation.

We have much pleasure in associating with this species

the name of Mrs. Crossley, in whose garden the specimens were first collected.

9. *Ennea drakensbergensis*, sp. n. (Pl. III. fig. 9.)

E. testa parum rimata, abbreviato-cylindriformi, cinerea; anfractibus sex, ventricosulis, undique confertim longitudinaliter rectistriatis; apertura rotunda; peristomate albo, nitido, quadriplato, plica parietali acinaciformi, conspicua, dente labiali crasso, simplici, basali minore, plica columellari interna mammæformi, perintrante.

Long. 4, lat. 2·25 mill.

Hab. Pietermaritzburg.

A shortly cylindrical shell, cinereous, with six whorls; whorls ventricose, adorned with somewhat straight longitudinal striæ; mouth roundish ovate, lip white, incrassate, reflexed, four-plaited, the labial and basal teeth being simple, the sutural (or parietal) large and deep-seated, the columellar internal and nipple-shaped.

One specimen.

10. *Ennea euthymia*, sp. n. (Pl. III. fig. 10.)

E. testa subrimata, abbreviata, cylindrica, incrassata, olivaceo-cinerea; anfractibus septem, ventricosis, ad suturas impressis, undique longitudinaliter oblique densistriatis; apertura rotunda; peristomate albo-nitente, reflexo, plicis vel dentibus sex munito, plica parietali magna intrante, labialibus duabus simplicibus, dente basali et columellari labialium instar, subtu hunc plica interna mammæformi, valde perintrante.

Long. 4·50, lat. 2 mill.

Hab. Pietermaritzburg.

A pretty little species, possessing in its peristomatal processes a marked contrast to other species of the genus from South Africa. The mouth is roundish, lip white, reflexed, furnished with six teeth or plaits—the parietal being large, scimitar-shaped; the two labial teeth or plaits, the basal, and the columellar are all similar and simple. Below this latter is an internal plait, white, nipple-shaped, and large.

11. *Ennea maritzburgensis*, sp. n. (Pl. III. fig. 11.)

E. testa parum rimata, tenui, subdiaphana, nitida; anfractibus sex vel septem, lævigatis, infra, juxta suturas solum, oblique striatulis; apertura ovata; peristomate albo-nitente, reflexo, plicis vel dentibus quinque munito, plica parietali acinaciformi, intrante, dentibus labialibus duobus, simplicibus, dente basali

simplici, parvo, plica columellari interna valde ad imam faucem penetrante.

Long. 3.50, lat. 1.10 mill.

Hab. Pietermaritzburg (*Quekett*).

A charming little subpellucid species; whorls six, smooth, excepting just below the sutures, where there is a trace of the oblique longitudinal striation so general a feature in the shells of this genus. The mouth is furnished with five teeth or plaits, three of them being quite simple, while the parietal is scimitar-shaped and penetrating, the columellar also very deep-seated.

Three specimens.

12. *Ennea polita*, sp. n. (Pl. III. fig. 12.)

E. testa lævi, tenui, pellucida, vitrea, dolioliformi, cylindrica, apice obtusissimo; anfractibus septem, lævibus; apertura ovata; peristomate vix reflexo, quinqueplicato, plica parietali et labiali magnis perintransantibus, dente labiali bifurcato, dente basali minore, simplici, plica columellari valde intrante, conspicua.

Long. 3, lat. 1.20 mill.

Hab. Tharfield (*Miss Mary L. Bowker*). In Coll. Edgar L. Layard, Esq.

A small pellucid, shining, smooth species, barrel-shaped; whorls seven, plain and smooth; mouth ovate, lip reflexed, white, five-plaited, of which the parietal, labial, and columellar plaits are conspicuous and deep-seated; the basal tooth small and simple; the labial tooth bifid.

Five specimens.

13. *Ennea pulchella*, sp. n. (Pl. III. fig. 13.)

E. testa rimata, pellucida, tenui, dolioliformi, nitida, apice obtuso; anfractibus septem, ventricosulis, infra suturas granato-marginatis, undique longitudinaliter striis obliquis decoratis; apertura subrotunda; peristomate albo, reflexo, incrassato, plicis vel dentibus quinque munito, plica parietali magna, acinaciformi, intrante, dentibus duobus labialibus simplicibus, basali parvo simplici, plica columellari perintransante, conspicua.

Long. 6, lat. 2.85 mill.

Hab. Chase Krantz, Maritzburg (*Burnup*).

A very pretty shining species. It is shortly cylindrical, pellucid, seven-whorled; whorls slightly ventricose, delicately longitudinally striate; close below the sutures there is a transverse pellucid line, the intermediate space being minutely granate; the aperture is roundish; peristome white, thick-

ened, furnished with five plaits or teeth, of which the two labial and the one basal are ordinary and simple, the parietal or sutural plait being large and deep-seated, and the columellar also conspicuous.

Two specimens.

Its nearest ally is *E. regularis*, M. & P., from which, however, it differs in having one whorl more, in the form of the aperture, and in the detail of the dentition.

14. *Ennea socratica*, sp. n. (Pl. III. fig. 14.)

E. testa profunde rimata, recta, cylindriciformi, crassa, brunneo-cinerea; anfractibus octo, apud suturas impressis, undique longitudinaliter oblique crassistriatis; apertura curta, subrotunda; peristomate albido, reflexo, ad basin incrassato, triplicato, plica parietali et labiali valde intrantibus, conspicuis, columellari interna simplici.

Long. 8, lat. 3.25 mill.

Hab. Pietermaritzburg.

A large form, of which we have only seen one specimen. Deeply rimate, eight-whorled; whorls incrassate, obliquely coarsely longitudinally striate, impressed at the sutures; mouth subrotund, lip furnished with three plaits, all deep-seated and conspicuous; peristome thickened internally at the base. The mouth seems small in proportion to the length of the shell, but there does not appear to be any malformation. More specimens are, however, desirable.

15. *Ennea tharfieldensis*, sp. n. (Pl. III. fig. 15.)

E. testa parum rimata, oblonga, cylindrica, albo-cinerea; anfractibus sex vel septem, ventricosulis, apud suturas impressis, undique longitudinaliter crassistriatis; apertura oblonga; peristomate producto, albo-nitente, incrassato, reflexo, quinqueplicato, plica parietali prominente, conspicua, plica labiali multum incrassata, aditum intrante et ocludente; basali interna mammæformi; columellari magna, incrassata; quinta denique inter columellarem parietalemque interna, minore.

Long. 4.50, lat. 2 mill.

Hab. Tharfield. In Coll. Edgar L. Layard, Esq.

Several specimens of a form we cannot exactly place with any described species, though much of the same build externally as several others. The peristome is five-plaited, of which two are quite internal, the remaining three conspicuously incrassate.

Allied to *E. crassidens*, but not a form of that species.

16. *Ennea Vandebroeckii*, sp. n. (Pl. III. fig. 16.)

E. testa obeso-cylindrica, cinerea, apice obtuso; anfractibus octo, undique longitudinaliter oblique striato-costatis; apertura ovato-rotunda; peristomate albo, reflexo, quinqueplicato, plica parietali conspicua, incurvata, labiali simplici, dentibus basalibus duobus simplicibus, plica columellari interna mammæformi.

Long. 7, lat. 3·50 mill.

Hab. Natal (*ex Coll. Vandebroeck*).

Marked by Mr. Vandebroeck as *E. Gouldi* (Pfr.), which it certainly is not. A bluntly cylindrical obese shell, with the whorls striato-costulate longitudinally; mouth round, five-plaited or toothed. In form allied to *E. Dunkeri*, Pfr.

Two specimens.

17. *Ennea vanstaadensis*, sp. n. (Pl. III. fig. 17.)

E. testa rimata, longa, cylindriformi, delicatula, succinea; anfractibus sex vel septem, undique confertim longitudinaliter tenuistriatis; peristomate albo, incrassato, nitente, plicis vel dentibus quatuor munito, plica parietali conspicua, prominente, intus extensa, dente labiali bifurcato, basali minore, simplici, plica columellari mammæformi, valde intrante.

Long. 5·50, lat. 1·75 mill.

Hab. Van Staaden's River (*J. Crawford, Esq.*).

Four specimens, of which the one we have taken as the type is completely cylindrical, prolonged, seven-whorled; the other three are somewhat shorter, but the mouth and tooth-processes are exactly the same.

18. *Succinea Bowkeri*, sp. n. (Pl. III. fig. 18.)

S. testa pertenui, læte ochracea; anfractibus tribus vel quatuor, ultimo rapide accrescente, subeffuso, apicali parvo, medio per-ventricoso, parvo; apertura ovata, labro tenuissimo, simplici.

Long. 13·50, lat. 9 mill.

Hab. Malvern (*Col. Bowker*).

We are unable to exactly match this shell with any known forms, though it approaches two Sandwich-Island species, both endemic. It does not appear either to be a variety of the ubiquitous *S. putris*, and we have therefore ventured to describe it. The species of this genus unfortunately are not only liable to much variation, but also offer no very salient points for characterization.

Two specimens, exactly similar.

19. *Planorbis Bowkeri*, sp. n. (Pl. III. fig. 19.)

P. testa pallide cinerea, altiuscula, parum nitente, sublævigata; anfractibus quatuor, deplanatis, rapide accrescentibus, disco superiore et inferiore æque excavatis; apertura obliqui-rotundata. Long. 8·20, lat. 3·40 mill.

Hab. North Transvaal (*Col. Bowker*).

A species not unlike *P. corneus* in miniature. The surface under a lens is found to be very finely, obliquely, longitudinally striate. The whorls are rounded, both the upper and lower disks being equally excavate.

20. *Planorbis Crawfordi*, sp. n. (Pl. III. fig. 20.)

P. testa parva, compressa, obliqui-striata, cinereo-olivacea; anfractibus quatuor, lente crescentibus, discis utrinque subrotundatis, inferiore magis appanato; apertura depresso-lunari. Long. (sp. maj.) 1, lat. 5 mill.

Hab. Van Staaden's River (*J. Crawford, Esq.*).

A small compressed species, whorls rounded and not angled, somewhat recalling our British *P. albus*.

Three specimens.

N.B.—In our last paper (Ann. & Mag. Nat. Hist. ser. 6, vol. xi., January 1893, pp. 20, 21) the descriptions of *Pupa dysorata* and *Sykesii* were, in part, accidentally transposed.

Of the former the description should read thus:—

Pupa dysorata, sp. n. (Pl. III. fig. 4.)

P. testa minutissima, oblonga, lævi, apice obtuso; anfractibus quinque, tumescentibus, ventricosis; apertura ovali; peristomate albido, paulum reflexo, ad marginem columellarem incrassatum unidentato.

Long. 1, lat. ·55 mill.

Hab. Griqualand East (*E. R. Sykes, Esq.*).

And of the latter:—

Pupa Sykesii, sp. n. (Pl. III. fig. 6.)

P. testa rimata, minuta, cylindrica, diaphana, apice obtuso; anfractibus septem vel octo, ventricosis, undique confertim longitu-

dinaliter tenuicostatis; apertura ovata; peristomate paullum reflexo, dentibus duobus munito, hoc parietali, illo basali, oppositis, inconspicuis.

Long. 1·90, lat. ·75 mill.

Hab. Griqualand East (*E. R. Sykes, Esq.*).

EXPLANATION OF PLATE III.

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| <i>Fig.</i> 1. <i>Macrocyclis Quekettiana.</i> | <i>Fig.</i> 11. <i>Ennea maritzburgensis.</i> |
| <i>Fig.</i> 2. <i>Achatina scævola.</i> | <i>Fig.</i> 12. — <i>polita.</i> |
| <i>Fig.</i> 3. — <i>penestes.</i> | <i>Fig.</i> 13. — <i>pulchella.</i> |
| <i>Fig.</i> 4. <i>Stenogyra Crawfordi.</i> | <i>Fig.</i> 14. — <i>socratica.</i> |
| <i>Fig.</i> 5. <i>Buliminus maritzburgensis.</i> | <i>Fig.</i> 15. — <i>thayfieldensis.</i> |
| <i>Fig.</i> 6. — <i>transvaalensis.</i> | <i>Fig.</i> 16. — <i>Vandenbroeckii.</i> |
| <i>Fig.</i> 7. — <i>jejunus.</i> | <i>Fig.</i> 17. — <i>vanstaadensis.</i> |
| <i>Fig.</i> 8. <i>Ennea Crossleyana.</i> | <i>Fig.</i> 18. <i>Succinea Bowkeri.</i> |
| <i>Fig.</i> 9. — <i>drakensbergensis.</i> | <i>Fig.</i> 19. <i>Planorbis Bowkeri.</i> |
| <i>Fig.</i> 10. — <i>euthymia.</i> | <i>Fig.</i> 20. — <i>Crawfordi.</i> |

XXII.—On some Ethiopian Pentatomidæ of the Group Halyinæ. By E. BERGROTH, M.D.

THE object of this paper is to give descriptions of some new or imperfectly known genera and species of Halyinæ. This group, which includes some of the most conspicuous Pentatomidæ, has its headquarters in Australia, but it is also well represented in Africa, although many of the species are doubtless still undescribed.

1. *Dalpada Cambouei*, Fallon.

Halys Cambouei, Fallon, Rev. d'Ent. x. 5 (1891).

Subovata, supra straminea, sat dense subacervatim nigro-punctata, subtus testacea, lateribus capitis, pectoris ventrisque nigris, in capite et pectore vittam angustam rufescentem includentibus, maculis marginalibus segmentorum ventralium semicircularibus pallidis. Caput pronoto longius, elongato-triangulari, basi nigrobimaculatum, jugis tylo multo longioribus et ante hunc contiguis, apice obtusis, lateribus nonnihil ante apicem obtuse angulato-eminulis, ocellis mox pone lineam inter angulum posticum oculorum fictam sitis, bucculis antice rotundatis, rostro apicem segmenti secundi ventris attingente, antennis (apice mutilis) fuscis, articulis duobus basalibus flavo-strigatis, primo angulum antepicalem jugorum haud superante, tertio secundo perpaullo longiore. Pronotum mox ante medium transversim impressum, marginibus lateralibus anticis leviter sinuatis, ante sinum inæqualiter denticu-